



## **Wisconsin Regulations for Controlling Mercury Emissions from Electric Utilities**

**Wisconsin Department of Natural Resources**

**Bureau of Air Management**

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Mercury contamination of freshwater fish in the Great Lakes states is a significant public health and economic issue. Wisconsin has taken many actions to reduce mercury discharges into the environment, including community recycling programs for mercury-containing products and stringent air pollution control requirements for waste incinerators and other significant sources of mercury emissions.

Wisconsin also is just one of four states that have established mercury emission reduction requirements for coal-fired electric utility boilers. The state acted because coal combustion by electric utilities is the largest remaining unregulated source of mercury air emissions in the nation, and the federal government was slow to address this significant pollution source.

Federal Clean Air Act amendments in 1990 set deadlines for controlling mercury emissions, but the U.S. Environmental Protection Agency didn't propose a rule until 2000, and the rule offered was ineffective. Now EPA is under a court-ordered agreement to issue a regulation by March 15, 2005 for reducing mercury air emissions from coal-fired electric utility boilers. To begin complying with this deadline, EPA proposed a Clean Air Mercury Rule in January 2004.

EPA's proposed rule received more public comment than any proposed rule the agency had ever introduced. Opposition to this rule was broad-based and included many public health agencies and state and local air pollution control agencies. They requested in their comments that EPA require greater mercury emission reductions on a faster timetable.

Wisconsin DNR also opposed EPA's proposed rule. In contrast to the January 2004 federal proposal, Wisconsin's regulation clearly demonstrates that mercury emission reductions from utilities are feasible and can be expeditiously achieved in a cost-effective manner without threatening electricity reliability. However, Wisconsin's mercury rule contains language requiring the DNR to adopt a federal mercury emissions control rule when one is issued. After the federal rule is issued, the DNR would have 18 months to revise its state rule to mirror federal requirements.

### **Summary of Wisconsin's Mercury Rule**

Citizen interest and concern about mercury contamination significantly influenced the development of Wisconsin's mercury rule. A citizen's petition from a broad-based group of concerned individuals prompted the DNR to develop rules to limit mercury air emissions from coal-fired utility boilers. Petition signers included public health professionals, legislators from

both major political parties, fishing organizations, Native American Tribes and environmental groups.

The Wisconsin DNR began developing its mercury regulation in December 2000. After a lengthy and intense stakeholder process, including hearings and advisory groups, the Natural Resources Board, whose seven governor-appointed members set policy for the DNR, adopted regulations in June 2003. The legislature reviewed and further modified the regulations, which took effect October 1, 2004.

Wisconsin's rule requires the state's four major utilities to reduce their mercury emissions in two phases: a 40% reduction by 2010, and a 75% reduction by 2015. The rule also establishes a goal of 80% reduction by 2018 to encourage additional progress. Collectively, the state's four utilities operate 42 coal-fired boilers. Wisconsin's rule does not require a specific control technology. Instead, each utility can select the approach it determines is most cost effective and best meets system needs. The DNR determined that the cost for each homeowner would on average be \$20 annually to meet the 80% reduction goal. Total cost for the four major utilities in the state to meet the 80% goal is estimated to be \$100 million annually.

The rule contains several important provisions to protect electric reliability and ensure that the reductions required remain appropriate throughout rule implementation:

***Emergency Waiver*** – The State's electric reliability is protected through the inclusion of many provisions in the regulations including a specific electric reliability waiver to cover emergency situations.

***Variances*** – To ensure electric reliability, variances can be requested based on excessive costs or lack of technology.

***Reduction Schedule*** - The compliance schedule is extensive and includes over 10 years before final reductions need to be achieved. This allows ample time for planning and implementation of effective mercury reduction approaches.

***Rule Evaluations*** - The regulations will be examined at three distinct periods during their 12-year life to ensure that requirements are cost-effective and achievable. If not, adjustments will be made.

Today, Wisconsin utilities emit 2,700 pounds of mercury per year. When fully implemented in 2015, the state's regulation will prevent 2,000 pounds of mercury from being released into the air per year from Wisconsin's four major utilities. Air emissions will be reduced to less than 700 pounds per year.

### **Why Controlling Mercury Emissions in Wisconsin is Important**

***Statewide Fish Consumption Advisory*** – Nearly all of Wisconsin's 15,000 lakes and 57,000 miles of rivers and streams are under a general fish consumption advisory that recommends that people, particularly pregnant women and young children, limit the number of some fish species they eat because of elevated mercury levels. Women of childbearing age and children under 15 can only eat large sportfish once a month and panfish only once a week. Men are advised to limit meals of large predator sportfish such as walleye and northern pike to once per week.

***Elevated Mercury Levels In People At Risk*** - Based on national statistics, 8 percent of women of childbearing age in Wisconsin have elevated mercury levels in their blood that pose a risk to their unborn children. A Wisconsin Department of Health and Family Services survey shows that 90 percent of women age 18-45 consume fish. This is the highest consumption rate of the 12 surveyed states. Further, 30 percent of these Wisconsin women eat sport fish in up to 240 meals a year.

***Fishing Economics*** – Besides the health risks caused by elevated levels of mercury in the environment, Wisconsin also is concerned about the important economic consequences associated with a potential reduction of recreation and tourism activities. Each year the DNR sells approximately 1.5 million fishing licenses -- 1 million to state residents and the rest to nonresidents. Among states, Wisconsin ranks second, behind Florida, in the number of fishing licenses sold to nonresidents. Fishing generates \$2.3 billion in economic impact in Wisconsin, including \$90 million in sales, fuel and income taxes and 26,000 jobs.

***Utility Coal Boilers Are Not Regulated*** – Until EPA issued its final rule, there were no federal mercury emission limits for existing coal fired utility boilers, even though the federal government began extensive regulatory studies in the early 1990s and called for mercury emission reductions from electric utility sources in 2000. Mercury emissions from coal-fired utility boilers in Wisconsin account for over 40 percent of the annual mercury air emissions from state sources.

***Research Findings*** - Preliminary findings from Wisconsin DNR research indicates that mercury levels in fish and other aquatic organisms can decline more quickly than originally predicted if mercury deposition decreases. An ongoing study in Little Rock Lake in northern Wisconsin by DNR scientist Carl Watras examined the amount of atmospheric mercury deposited to the lake and the corresponding concentrations of mercury in the water column and in fish tissue. The study documented parallel decreases in mercury deposition, water and fish tissue concentrations between 1994 to 2000.

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